User's Manual

Xviewer
DL850 Advanced Utility

YOKOGAWA
Yokogawa Meters & Instruments Corporation

IM 701992-62E
3rd Edition

Thank you for purchasing the Xviewer with DL850 Advanced Utility Features. This user's manual explains the DL850 advanced utility features and how to use these features. It mainly focuses on using this utility on Windows XP. To ensure correct use, please read this manual thoroughly before beginning operation.
Keep this manual in a safe place for quick reference in the event a question arises. For information on other features, how to use these features, and handling precautions, see the following manual.

Manual Name	Manual No.	Description
701992/701994 Xviewer User's Manual	IM 701992-01E	Explains the Xviewer's standard features and how to use these features.

Notes

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Conventions Used in This Manual

Notes

The notes and cautions in this manual are categorized using the following symbols.

Note Calls attention to information that is important for proper operation of the software.

Symbols and Conventions Used in the Procedural Explanations

The contents of the procedural explanations are indicated using the following symbols.

Procedure Carry out the procedure according to the step numbers. All procedures are written under the assumption that you are starting operation at the beginning of the procedure, so you may not need to carry out all the steps in a procedure when you are changing the settings.

Explanation This section describes the setup items and the limitations regarding the procedures.

Character Notations

Bold formatting indicates menus, buttons, etc. that the procedure requires you to click or interface terms.

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1.1 Software Contents

The DL850 Advanced Utility is made up of the following two pieces of software.

File Utility

You can use this program to perform the following operations on data files that have been saved by the DL850/DL850V.

- File merging
  You can merge the multiple files that were created when a DL850/DL850V performed a division and save operation on a waveform data file (with the files merged sequentially over time). You can also merge waveform data files that were saved by multiple DL850/DL850Vs into a single file. These merged files can be viewed in the same Xviewer window.
- File division
  You can divide a single waveform data file that was saved by a DL850/DL850V into multiple files of equal time length. You can also clip a waveform data file to save a segment of this file as a separate file.
- Format conversion
  You can convert the format of a waveform data file that was saved by a DL850/DL850V to .CSV, .FLD (a 32 bit floating-point format file that can be read by MATLAB), or .WVF (an original format created by YOKOGAWA).
- Finalization
  Files that are being saved through DL850/DL850V hard disk recording and files whose recording were interrupted cannot be viewed in Xviewer because they lack the additional information that is required to do so. By using the finalize feature, you can add this information to these types of files.

Real-Time File Transfer Software

The waveform data files that are being recorded through DL850/DL850V hard disk recording are transferred to a PC by the real-time file transfer software.
The transferred files can be viewed and analyzed in Xviewer.

These two programs are installed automatically when you install Xviewer.

1.2 File Utility Software

File Merging

File Merging Sequentially over Time

This feature merges the multiple files that were created when a DL850/DL850V performed a division and save operation on a waveform data file. The result is a single file in which the multiple files are merged sequentially over time. If the merged file exceeds 2 GB in size, it is saved into multiple files, each of which is a maximum of 2 GB in size.

Applicable Data Files

This feature merges the following types of data files sequentially over time.

- Waveform data files that were divided and saved into multiple files through hard disk recording
- Files that were divided through this file utility program
- Waveform data files that were saved through hard disk recording*

  * Files that meet the following conditions can be merged.
    The sample rate is the same.
    The number of channels is the same.
    The measurement point timestamps are sequential between the files.

Files that were saved through the dual capture feature cannot be merged.

Names of Merged Files

The name of a merged file is assigned as shown below.

Assigned automatically

"m" is inserted in front of the sequence number (_000) in the name of the first file that was merged.

Example: Name of the first file that was merged: test1_000.wdf
Name of the merged file: test1m_000.wdf

Assigned manually

"Specified file name" + "_000.wdf"

Merging Files to View the Waveforms of Multiple Files at the Same Time

You can use Xviewer to view, in a single window, the waveform data that has been saved to multiple files.

By merging files that have been saved by different DL850/DL850Vs, you can view the waveforms from many different channels.

Applicable Data Files

- Files that have been saved through DL850/DL850V hard disk recording
- Files that have been saved through the use of the normal trigger feature

Additionally, if the difference between the absolute times of different files is within the record length of the file that has the earliest absolute time, you can align the absolute times to merge the files.

The following files cannot be merged.

- Files that were saved through the dual capture feature
- Files that have different sample rates
- Files that have different record lengths
- Files containing data measured by the 16-CH Voltage Input Module or CAN Bus Monitor Module.

Number of Files That Can Be Merged

Up to 8 files can be merged.

Number of Channels That Can Be Merged

So long as the total number of channels of all the files does not exceed 128 channels, the files can be merged.

Names of Merged Files

The name of a merged file is assigned as shown below.

Assigned automatically

When the first file that was merged is a file that was saved through hard disk recording, “m” is inserted in front of this file’s 3-digit sequence number (_000).

Example: Name of the first file that was merged: test1_000.wdf
Name of the merged file: test1m_000.wdf

When the first file that was merged is a file that was saved through the normal trigger feature, “m” is inserted after the file name.

Example: Name of the first file that was merged: test1.wdf
Name of the merged file: test1m.wdf

Assigned manually

“Specified file name” + “_000.wdf”

File Division

You can divide a file into segments that have the same specified length of time or the same specified number of data points. You can also clip a data file to save a specified segment of the file as a separate file.
By dividing files, you can use Xviewer to analyze them in a short period of time.

Equal Division

Starting from the beginning of a file or from a specified point in the file, you can divide the file equally into segments by the specified length of time or by the specified number of data points, and then save the segments as separate files. You can also divide multiple files (up to 128 files) collectively under the same conditions.

Applicable Files

- Files that have been saved through DL850/DL850V hard disk recording
- Files that were merged sequentially over time or that were divided through this file utility program

Files that were saved through the dual capture feature cannot be divided.

Number of File Divisions

You can divide files so long as the number of files that result does not exceed 1,000.
You cannot divide a file so that the number of data points after division exceeds 10 Gpoint.

File Names

For each of the names of divided files, the sequence number [n] (n = 0 to 999) of the resultant file is inserted in front of the original file's sequence number (_000).

Example: Name of the original file: test1_000.wdf
Names of resultant files: test1[0]_000.wdf, test1[1]_000.wdf, ...

If the size of the resultant file exceeds 2 GB, it is divided into files that are each a maximum of 2 GB in size.
In this case, the sequence number of the original file is increased for each resultant file.

Example: If the resultant files in the above example exceed 2 GB in size:
test1[0]_000.wdf, test1[0]_001.wdf, test1[0]_002.wdf, ...
test1[1]_000.wdf, test1[1]_001.wdf, test1[1]_002.wdf, ...

Clipping

Starting from the beginning of a file or from a specified point in the file, you can clip a file to produce a segment of the file that has the specified length of time or the specified number of data points, and then save this segment as a separate file.
You can also clip multiple files (up to 128 files) collectively under the same conditions.

Applicable Files

- Files that have been saved through DL850/DL850V hard disk recording
- Files that were merged sequentially over time or that were divided through this file utility program

You cannot clip files that were saved through the dual capture feature.

Size of Segments That Clipped from Files

You can clip files to produce segments that have up to 10 Gpoint of data.

File Names

For the name of the file that contains the resultant segment, [000] is inserted in front of the original file's sequence number (_000).

Example: Name of the original file: test1_000.wdf
Name of the file that contains the resultant segment: test1[000]_000.wdf

If the size of the file that contains the resultant segment exceeds 2 GB, it is divided into files that are each a maximum of 2 GB in size.
In this case, the sequence number of the original file is increased for each resultant file.

Example: If the resultant file in the above example exceeds 2 GB in size:
test1[000]_000.wdf, test1[000]_001.wdf, test1[000]_002.wdf, ...

Format Conversion

You can convert a waveform data file that was saved by a DL850/DL850V to a .CSV, .FLD, or .WVF file.
You can also convert the format of multiple files (up to 128 files) collectively under the same conditions.

CSV Conversion

You can use a spreadsheet program, such as Excel, to manipulate the data in .CSV files.
You can also divide the file by the specified number of lines and save the resultant files.

Applicable Files

- DL850/DL850V waveform data files

Files that were saved through the dual capture feature cannot be converted.

Number of Converted Files

You can convert files so long as the number of files that result does not exceed 1,000.

Maximum Number of Lines

You can convert data into a file that has up to 100,000,000 lines.

File Size

You can convert a file so long as its resultant file size does not exceed 2 GB.

File Names

The file name is the same as the name of the original file. The extension is .csv.
If you divide a file and then convert it, a 3-digit sequence number [n] (n = 000 to 999) is inserted before the extension for each converted file.

Example: Name of the original file: test1_000.wdf
Name of converted file: test1_000.csv
If the original file has been divided:
Names of converted files: test1_000[000].csv, test1_000[001].csv...

Header Data

You can also include the measurement conditions in the file as header data. If you divide the file, you can select whether to include the header data in just the first file or in all the files.

Time Axis Information

You can also include the timestamp data in the file. You can select absolute time or relative time.

Data Interpolation (DL850/DL850V 16-CH Voltage Input Module or CAN Bus Monitor Module)

When a measurement is performed with the 16-CH Voltage Input Module or the CAN Bus Monitor Module, only a single sub channel's data is saved, so you cannot save the measured data of all sub channels during the same measurement time. Therefore, there are sample points that do not have measured data from some sub channels.
You can select whether conversion is performed by leaving the missing measured values blank or by interpolating them from the previous measured data.

FLD Conversion

You can convert data files to binary data in 32 bit floating-point format that can be read by MATLAB.

Applicable Files

DL850/DL850V waveform data files

Files that were saved through the dual capture feature cannot be converted.

File Size

You can convert a file so long as its resultant file size does not exceed 2 GB.

File Names

The file name is the same as the name of the original file. The extension is .fld.

WVF Conversion

You can convert data files to WVF format, an original data format developed by YOKOGAWA.

Applicable Files

DL850/DL850V waveform data files

Files that were saved through the dual capture feature cannot be converted.

File Size

You can convert a file so long as its resultant file size does not exceed 2 GB.

File Names

The file name is the same as the name of the original file. The extension is .wvf.

Finalization

Files that are being saved through DL850/DL850V hard disk recording and files whose recording processes were interrupted cannot be viewed in Xviewer because they lack the additional information that is required to do so. By using the finalize feature, you can add this information to these types of files.

You can also process multiple files (up to 128 files) collectively under the same conditions.

Applicable Files

Waveform data files that were saved through DL850/DL850V hard disk recording but have not been finalized

Files that were saved through the dual capture feature cannot be finalized.

File Names

You can overwrite the original file or save the resultant file with the same name as the original file in a Finalize sub folder that is created in the folder of the original file.

1.3 Real-Time Data Transfer Software

The waveform data files that are being recorded through DL850/DL850V hard disk recording are transferred to a PC by the real-time file transfer software.
The transferred files can be viewed and analyzed in Xviewer.

Transfer

During DL850/DL850V hard disk recording, while a file is being divided and saved, the resultant files are transferred to a PC in order of their creation.
The file names are the same as the file names created by the DL850/DL850V.
If a file already exists at the transfer destination, a sequence number (1, 2, ...) is added at the start of the name of the new file.
If the transfer is aborted before it is completed, any files that have not been completely transferred are discarded. If you restart the transfer, the files that were not previously transferred to the PC are transferred in order.

File List

You can view a list of the files that have been transferred from the DL850/DL850V.
You can also view the following information in the list.

- File names (only the name of the first file)
- Date and time that the file was updated (date and time on the DL850/DL850V)
- Data size (total size of all files represented by the displayed first file)
- Transfer status
  - Complete: The last file has been transferred.
  - Transferring: The last file has not been transferred.
  - Aborted: The file transfer has been aborted.
- Displayable range
  The range of resultant files that can be shown on Xviewer is displayed as a percentage of all the files that were made through file division.

Log Display

You can view the file transfer history as a log. You can view the history of the last 5,000 transferred files. You can also save the displayed log as a text file.

Other Features

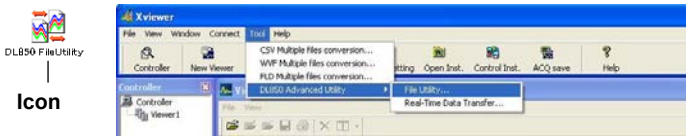
You can start transferring files from the DL850/DL850V at the same time that you start this software, and you can also start performing measurements on the DL850/DL850V at the same time that you start transferring files.

2.1 Starting and Exiting the File Utility

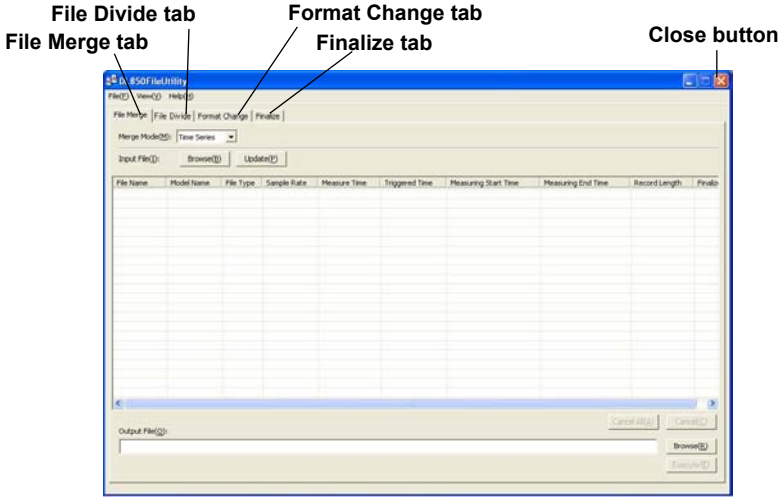
Procedure

Starting the File Utility

1. Use one of the following methods to start the file utility.
   - Double-click the DL850 File Utility icon on the desktop.
   - Start Xviewer. On the **Tool** menu, click **DL850 Advanced Utility** and then **File Utility**.
   - On the Windows taskbar, click **Start**, **All Programs**, **YOKOGAWA**, **Xviewer**, and then **DL850FileUtility**.



Startup Window



Exiting the File Utility

1. To exit the file utility, click the close button in the upper right of the file utility window. Alternatively, on the **File** menu, click **Exit**.

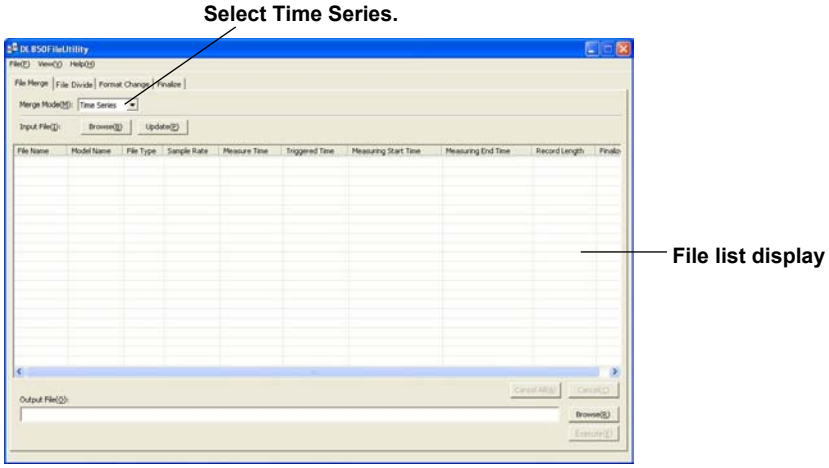
2.2 Merging Files

Procedure

1. Start the file utility, and then click the **File Merge** tab.
2. Set Merge Mode to **Time Series** (to merge files sequentially over time) or **Channel** (to view the waveforms from multiple files in a single window).

   If you have set Merge Mode to Channel and you want to align the times of the files that you are merging, select the Absolute Time check box. If the difference between the absolute times of different files that you want to merge is within the record length of the file that has the earliest absolute time, align the absolute times to merge the files.

When Merging Files Sequentially over Time



When Merging Files to View the Waveforms of Multiple Files at the Same Time

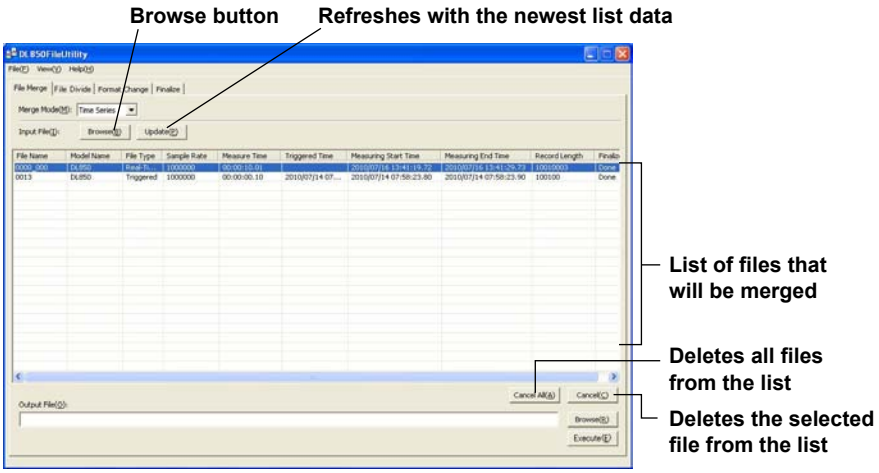
Select Channel.
Select this check box if you want to align the absolute time differences of the different files to merge them.

Selecting the Source Files

3. Click **Browse** next to Input File to select the files that you want to merge, or drag the files directly to the file utility window's file list. The selected files appear in the file list.

To delete files from the file list, click the file that you want to delete (this selects the file), and then click **Cancel** or press **DELETE**. To delete all files from the file list, click **Cancel All**.

You can change the order of the files in the list by dragging them to different positions.


Browse button
Refreshes with the newest list data
List of files that will be merged
Deletes all files from the list
Deletes the selected file from the list

Note

Only the first file of a group of files that were created by a division and save operation by a DL850/DL850V is displayed. Selecting the first file selects all the files.

Setting the Save Destination for the Merged File

4. Click **Browse** under Output File to specify the save destination for the merged file. You can also specify the file name to save the file. If you do not specify the save destination, the file will be saved in the same folder as the first file that is merged.

Executing File Merging

5. Click **Execute** to merge all the files in the file list.

Explanation

Merge Mode

Time Series

You can use this mode to merge files that are sequential in time. Select this mode when you want to merge files that were generated by a DL850/DL850V division and save operation back into a single file.
You can merge up to 100 files.

Channel

Select this mode when you want to view the waveforms from different files in a single window.
If you select Absolute Time, you can align the absolute time differences of the different files to merge them. The adjustable range of absolute time differences between files is within the record length of the file that has the earliest absolute time.
You can merge up to 8 files, but the total number of channels among all the files that you are merging must not exceed 128.

File List

All the files that are displayed in the list are merged.
To select the table headings, on the View menu, click Row Select.

File Name:	File names displayed without extensions
Model Name:	Name of the model that saved the data
File Type:	File type, such as hard-disk recording or triggered measurement
Sample Rate:	The sample rate at the time that measurements were performed
Measure Time:	Measurement time that corresponds to the file's data with a resolution of 10 ms
Triggered Time:	For triggered measurement files, the date that the trigger occurred with a resolution of 10 ms
Measuring Start Time:	The time that the file's measurement started with a resolution of 10 ms. This is the measurement time of the first data.
Measuring End Time:	The time that the file's measurement ended with a resolution of 10 ms. This is the measurement time of the last data.
Record Length:	The number of data points per channel
Finalize:	Whether the file was properly finalized. "Done" is displayed if the file was properly finalized, and "Undone" is displayed otherwise. Files that have not been finalized cannot be merged. Use this software program's finalize feature to finalize these files.

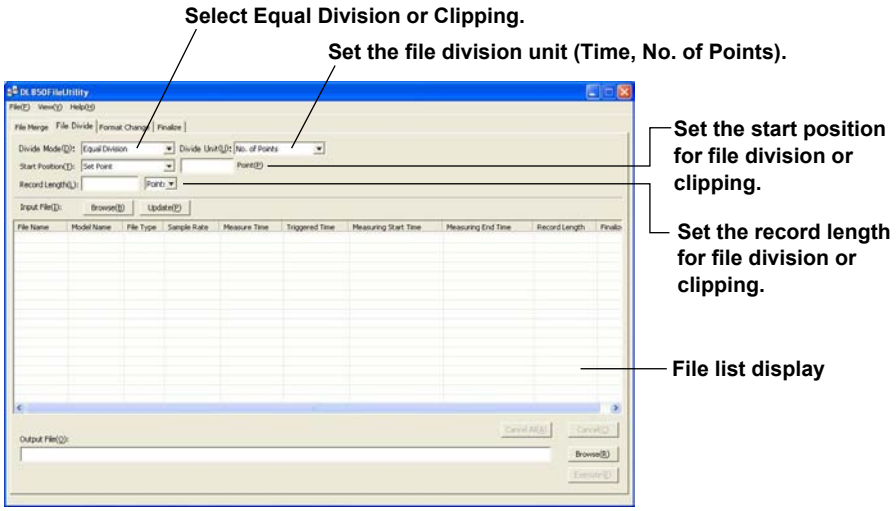
File Names

For details on the names of merged files, see section 1.2, "File Utility Software."

2.3 Dividing and Clipping Files

Procedure

1. Start the file utility, and then click the **File Divide** tab.
2. Set Divide Mode to **Equal Division** or **Clipping**.


Select Equal Division or Clipping.
Set the file division unit (Time, No. of Points).
Set the start position for file division or clipping.
Set the record length for file division or clipping.
File list display

Setting the Unit for File Division

3. You can set the unit for file division or for clipping to **Time** or **No. of Points**.

Setting the Start Position

4. Set the start position for file division or for clipping.

   If you have set Divide Unit to No. of Points, set Start Position to **First Data** or **Set Point**. If you set Start Position to Set Point, enter the data point to start from.

   If you have set Divide Unit to Time, set Start Position to **First Data** or **Set Time**. If you set Start Position to Set Time, enter the date and time to start from.

Setting the Record Length

5. Set the record length for file division or for clipping.

   If you have set Divide Unit to No. of Points, enter the number of data points. The unit is fixed to Points.

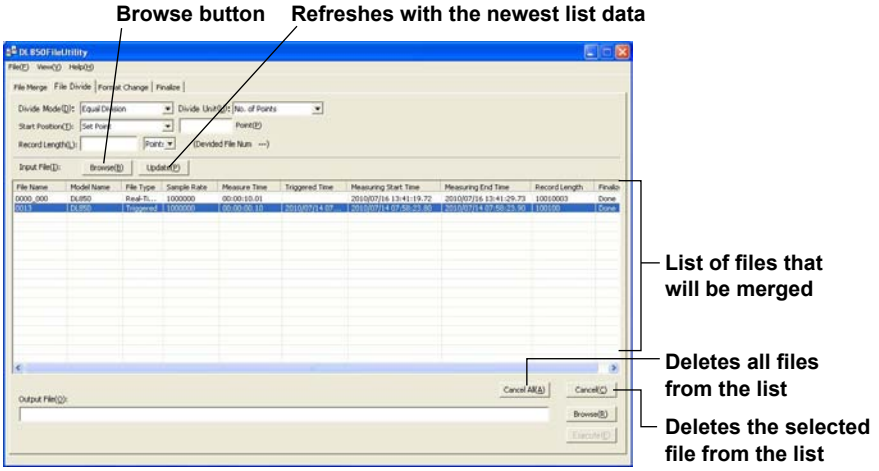
   If you have set Divide Unit to Time, enter the length of time. You can set the unit to Day, Hour, Minute, or Second.

Registering Files in the File List

6. Click **Browse** next to Input File to select the files that you want to use or drag the files directly to the file utility window's file list. The selected files appear in the file list.

To delete files from the file list, click the file that you want to delete (this selects the file), and then click **Cancel** or press **DELETE**. To delete all files from the file list, click **Cancel All**.

You can change the order of the files in the list by dragging them to different positions.


Browse button
Refreshes with the newest list data
List of files that will be merged
Deletes all files from the list
Deletes the selected file from the list

Note

Only the first file of a group of files that were created by a division and save operation by a DL850/DL850V is displayed. Selecting the first file selects all the files.

Selecting the Source Files

7. The file in the file list that is selected is the one that will be divided or will be clipped.

Click the file that you want to use to select it. If you hold down SHIFT and click a file, you can select multiple consecutive files. If you hold down CTRL and click files, you can select just the files that you click. You can select up to 128 files.

Setting the Save Destination for the Files That Result From the Division Operation

8. Click **Browse** under Output File to specify the save destination for the files that result from the file division or clip operations. You can also specify the file name to save the file. If you do not specify the save destination, files will be saved in the same folder as their source files.

Executing the File Division

9. Click **Execute** to divide or clip the files that are selected on the file list.

If you have selected multiple files, they are all divided or clipped collectively under the same conditions. You can divide up to 128 files at once.

Explanation

Divide Mode

Equal Division: Starting from the beginning of a file or from a specified point in the file, you can divide the file equally into segments by the specified length of time or by the specified number of data points, and then save the segments as separate files.
You can divide a file into a maximum of 1,000 files. You cannot divide a file so that the number of data points after division in a single file exceeds 10 Gpoint.

Clipping: Starting from the beginning of a file or from a specified point in the file, you can clip a file to produce a segment of the file that has the specified length of time or the specified number of data points, and then save this segment as a separate file. The maximum size of this resultant file is 10 Gpoint.

Record Length

This setting represents the number of data points or the time from the start position that will be used to divide or clip files. You can specify a value of up to 10 Gpoint.

File List

For details on the file list table headings, see section 2.2.

File Names

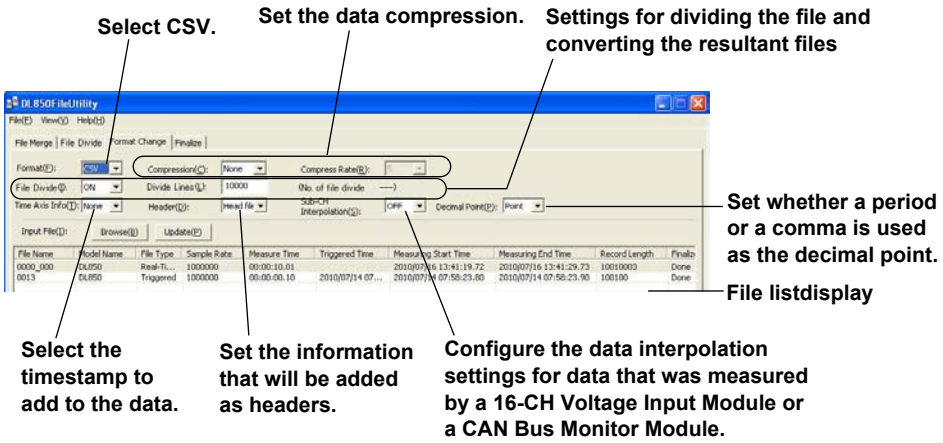
For details on the names of the files that result from file division or clipping operations, see section 1.2, “File Utility Software.”

2.4 Converting File Formats

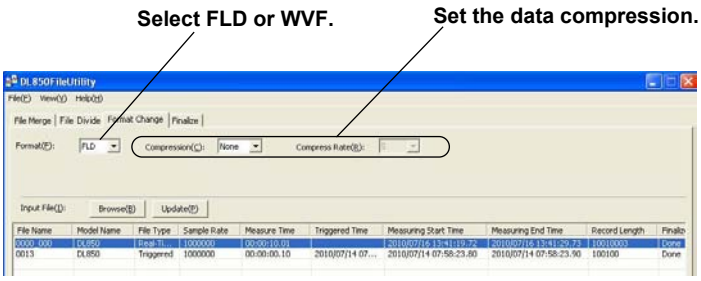
Procedure

1. Start the file utility, and then click the **Format Change** tab.
2. Set Format to **CSV**, **FLD**, or **WVF**.

When Converting to CSV Format


Select CSV.
Set the data compression.
Settings for dividing the file and converting the resultant files
Set whether a period or a comma is used as the decimal point.
File listdisplay
Select the timestamp to add to the data.
Set the information that will be added as headers.
Configure the data interpolation settings for data that was measured by a 16-CH Voltage Input Module or a CAN Bus Monitor Module.

When Converting to FLD or WVF Format



Setting the Data Compression

3. Set Compression to **None**, **PP Comp**, or **Decim**. If you set Compression to PP Comp or Decim, set Compress Rate.

Setting the File Divisions (CSV)

4. Set File Divide to **ON** or **None**. If you set File Divide to ON, set the number of lines to divide the file by (Divided Line). The number of files that will result from the file division is displayed as Divided File Num.

Setting the Time Axis Information (CSV)

5. Set whether to include the measured data's timestamp.

   Set Time Axis Info to **None**, **Absolute Time**, or **Relative Time**. If you select None, the timestamps will not be included. If you select Relative Time, the relative times from the trigger point will be included as the timestamps.

Setting the Header (CSV)

6. Set whether to include the measurement conditions as the file's header.

Set Header to **None**, **All file**, or **Head file**.

If you select None, the header will not be included.

If you select All file, the header will be included in all files that result from the division and conversion operation.

If you select Head file, the header will be included in only the first file of all the files that result from the division and conversion operation.

Setting the Sub Channel Interpolation (Only when data that has been measured by the 16-CH Voltage Input Module or CAN Bus Monitor Module is converted to CSV format)

7. Set whether to interpolate the measured data for sub channels that do not have any when measurements are performed by a DL850/DL850V 16-CH Voltage Input Module or CAN Bus Monitor Module.

Set Sub-CH Interpolation to **ON** or **OFF**.

Setting the Decimal Point (CSV)

8. Set whether a period or a comma will be used to represent the decimal point.

Set Decimal Point to **Point** or **Comma**.

If you set Decimal Point to Point, data will be separated by commas when the CSV conversion is complete. If you set Decimal Point to Comma, data will be separated by periods when the CSV conversion is complete.

Registering Files in the File List

The method for registering files in the file list is the same as was explained in the section for dividing files. See page 2-6.

Selecting the Source Files

The method for selecting the source file is the same as was explained in the section for dividing files. See page 2-6.

Setting the Save Destination for the Converted Files

9. Click **Browse** under Output File to specify the save destination for the converted files. You can also specify the file name to save the file. If you do not specify the save destination, the files will be saved in the same folder as their source files.

Executing the Conversion

10. Click **Execute** to convert the files that are selected on the file list.

If you have selected multiple files, they are all converted collectively under the same conditions. You can convert up to 128 files at once.

Explanation

Compress Rate

The number of data points is compressed down to 1/(the specified value) of its original number. For example, if you set Compress Rate to 5, the data is compressed to 1/5 of its original size.

Time Axis Info

You can include the measured data's timestamp as an absolute-time value or as a relative-time value from the trigger point. If you specify relative time, the trigger point is set as 0. Any times previous to the trigger point are displayed as negative values, and any times after the trigger point are displayed as positive values.

Sub-CH Interpolation

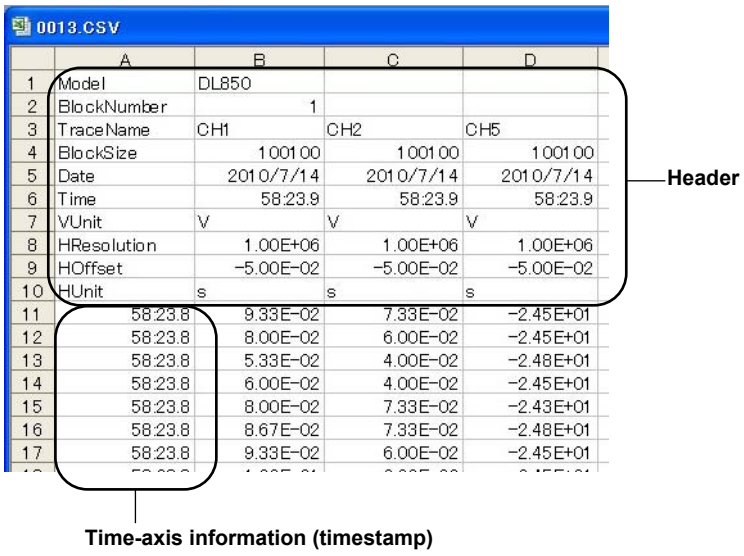
You can interpolate sub channel data from the previous values measured by a 16-CH Voltage Input Module or CAN Bus Monitor Module. If you specify no interpolation, data points that do not have any data will be blank.

Decimal Point

You can use a period or comma as the decimal point.
The symbol that you do not use as the decimal point will be used to separate the data in the converted .CSV file.

CSV Format

The format of files that have been converted to .CSV files is shown below.



	A	B	C	D
1	Model	DL850		
2	BlockNumber	1		
3	TraceName	CH1	CH2	CH5
4	BlockSize	100100	100100	100100
5	Date	2010/7/14	2010/7/14	2010/7/14
6	Time	58:23.9	58:23.9	58:23.9
7	VUnit	V	V	V
8	HResolution	1.00E+06	1.00E+06	1.00E+06
9	HOffset	-5.00E-02	-5.00E-02	-5.00E-02
10	HUnit	s	s	s
11	58:23.8	9.33E-02	7.33E-02	-2.45E+01
12	58:23.8	8.00E-02	6.00E-02	-2.45E+01
13	58:23.8	5.33E-02	4.00E-02	-2.48E+01
14	58:23.8	6.00E-02	4.00E-02	-2.45E+01
15	58:23.8	8.00E-02	7.33E-02	-2.43E+01
16	58:23.8	8.67E-02	7.33E-02	-2.48E+01
17	58:23.8	9.33E-02	6.00E-02	-2.45E+01

Data Size

You cannot convert a file so that the resultant file size is greater than 2 GB.

File List

For details on the file list table headings, see section 2.2.

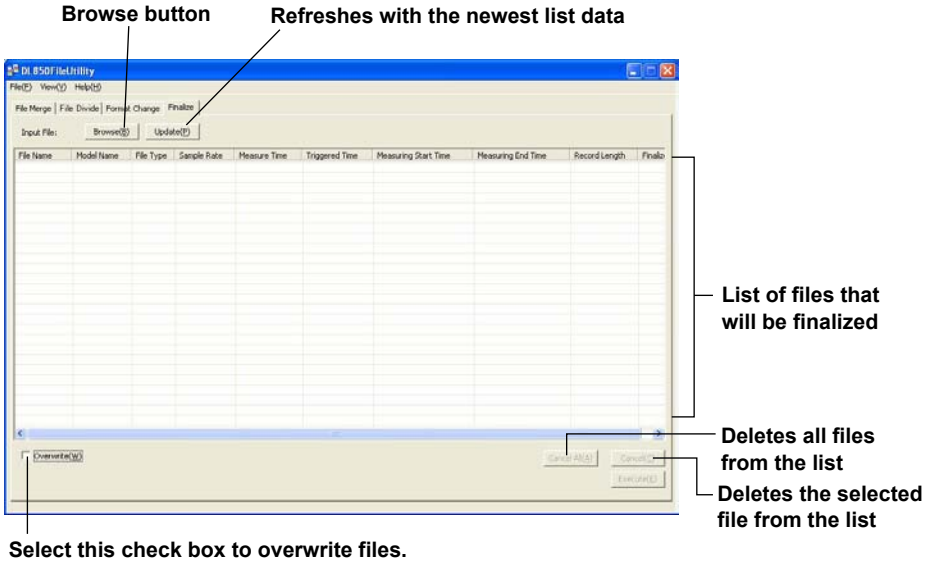
File Names

For details on the names of converted files, see section 1.2, "File Utility Software."

2.5 Finalization

Procedure

1. Start the file utility, and then click the **Finalize** tab.


Browse button
Refreshes with the newest list data
List of files that will be finalized
Deletes all files from the list
Deletes the selected file from the list
Select this check box to overwrite files.

2. If you want to overwrite the original file with the finalized file, select the Overwrite check box.

Registering Files in the File List

The method for registering files in the file list is the same as was explained in the section for dividing files. See page 2-6.

Selecting the Source Files

The method for selecting the source file is the same as was explained in the section for dividing files. See page 2-6.
For files that have not been finalized, the “Finalize” column displays “Undone.”

Executing the Finalization

3. Click **Execute** to finalize the files that are selected on the file list.

   If you have selected multiple files, they are all finalized collectively. You can finalize up to 128 files at once.

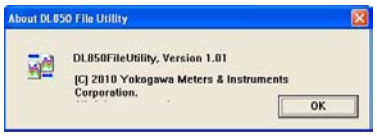
Explanation

Files that were not saved properly, for example, if the power was turned off while data was being saved, do not have the additional information that is required to view these files in Xviewer.
By finalizing these files, you can add the necessary information so that they can be viewed in Xviewer.

2.6 Viewing the Version

Procedure

1. Start the file utility. On the **Help** menu, click **About DL850 File Utility** to view the version of this software program.

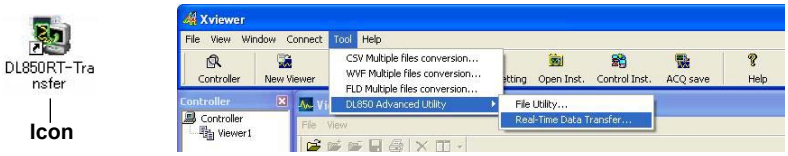


3.1 Starting and Exiting the Real-Time Data Transfer Software

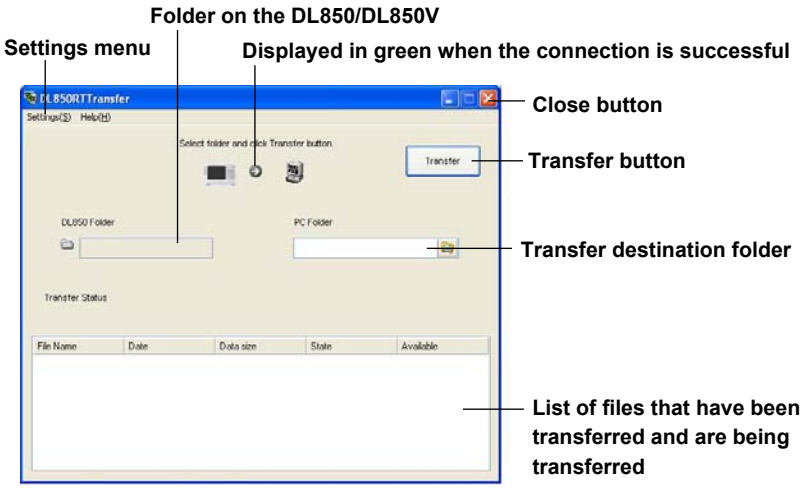
Procedure

Starting the Real-Time Data Transfer Software

1. Use one of the following methods to start the real-time data transfer software.
   - Double-click the DL850 RT Transfer icon on the desktop.
   - Start Xviewer. On the **Tool** menu, click **DL850 Advanced Utility** and then **Real-Time Data Transfer**.
   - On the Windows taskbar, click **Start**, **All Programs**, **YOKOGAWA**, **Xviewer**, and then **DL850RTTransfer**.



Startup Window



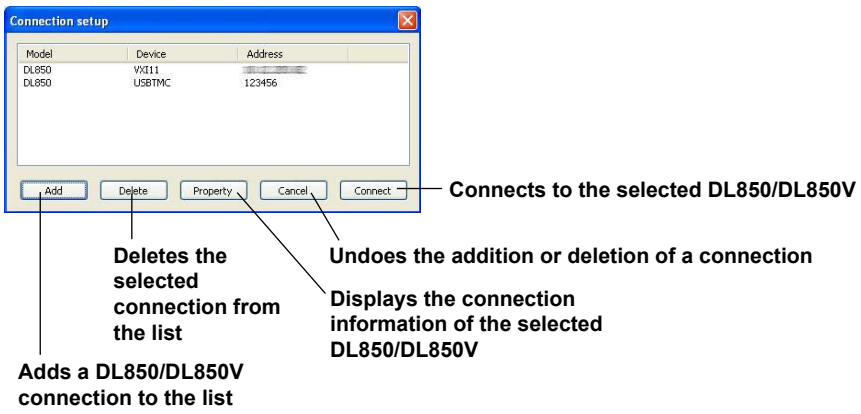
Exiting the Real-Time Data Transfer Software

1. To exit the real-time data transfer software, click the close button in the upper right of the real-time data transfer window. Alternatively, on the **Settings** menu, click **Exit**.

3.2 Connecting to and Disconnecting from the DL850/DL850V

Procedure

1. On the real-time data transfer software's **Settings** menu, click **Connect** to view the Connection setup dialog box.

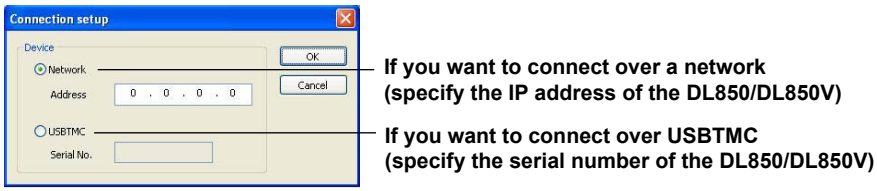


Adding a DL850/DL850V to the Connection List

2. Click **Add** to display the following dialog box.

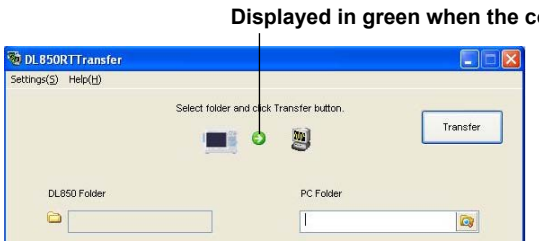
   Configure the settings according to the method that you will use to connect the DL850/DL850V.

   Click OK to add the DL850/DL850V to the list.


Connection setup
Device
Network
Address
0 . 0 . 0 . 0
USBTMC
Serial No.
OK
Cancel
If you want to connect over a network (specify the IP address of the DL850/DL850V)
If you want to connect over USBTMC (specify the serial number of the DL850/DL850V)

Connecting

3. Select the DL850/DL850V that you want to connect to from the list explained in step 1, and then click **Connect**. If the connection is successful, the color of the arrow icon in the window will change to green.



Disconnecting

4. On the real-time data transfer software's **Settings** menu, click **Disconnect**.

Explanation

You can use an Ethernet or USB connection to connect a PC to a DL850/DL850V.

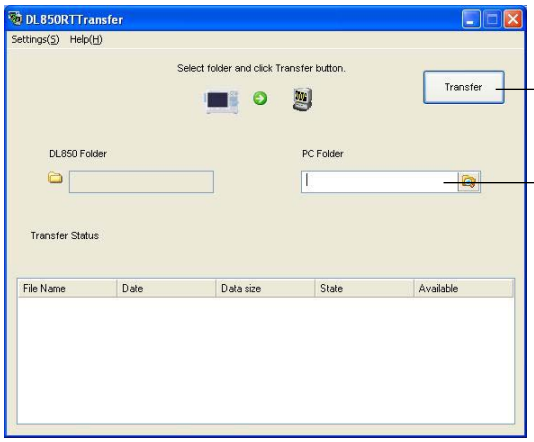
Network: Specify the IP address of the DL850/DL850V that you want to connect to.

USBTMC: Specify the serial number of the DL850/DL850V that you want to connect to.

3.3 Starting and Stopping Data Transfers

Procedure

1. On the real-time data transfer window, set **PC Folder**, which is the destination folder on the PC for the data transfer.



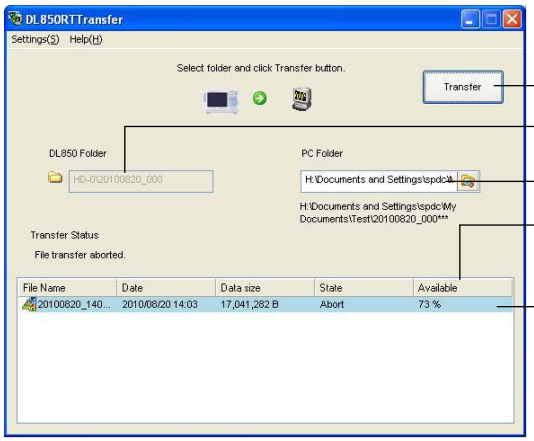
Transfer button

Transfer destination folder

2. Click **Transfer**.

   The data transfer begins, and the Transfer button changes to the Stop button. The name of the folder that the DL850/DL850V is performing hard disk recording on is displayed under DL850 Folder, and the file information is appended to the file list as the files are transferred.

   When you want to transfer data, you have to first turn on the DL850/DL850V hard-disk-recording and file-division features.



Stop button

Folder on the DL850/DL850V

Transfer destination folder

Percentage of the file that can be viewed in Xviewer in relation to the total file size

List of files that have been transferred and are being transferred
Double-click a file to view and analyze it in Xviewer.

Stopping Data Transfers

3. Click **Stop**.

Explanation

When the file-division and hard-disk-recording features on the DL850/DL850V that you are connected to have been turned on, files that have been saved and files that are being saved through hard disk recording are transferred to the PC. If either of these features has been turned off, you cannot transfer files.
Data that is being transferred can also be viewed and analyzed on Xviewer. Data from files that are displayed in the file list can be viewed in Xviewer when the data is ready to be displayed. Close Xviewer and double-click the file to view data that is being transferred to the PC.

Note

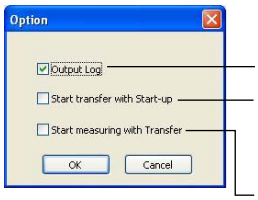
- Files that have been divided by the DL850/DL850V are recorded to the hard disk at the following intervals.
  (DL850/DL850V's TIME/DIV × 10)/number of file divisions
- The following methods are recommended to avoid duplicate file names.
  - Set auto-naming on the DL850/DL850V to the date.
  - When deleting files on the DL850/DL850V main unit that were transferred in real time, be sure to delete the corresponding files on the PC side.
- You can perform data transfer if one file's record length is 5 MB or more. Please adjust the DL850/DL850V's record length and number of file divisions.

3.4 Other Settings

Procedure

Setting Options

1. On the real-time data transfer software's **Settings** menu, click **Option** to display the Option dialog box.



The software outputs a data transfer log.

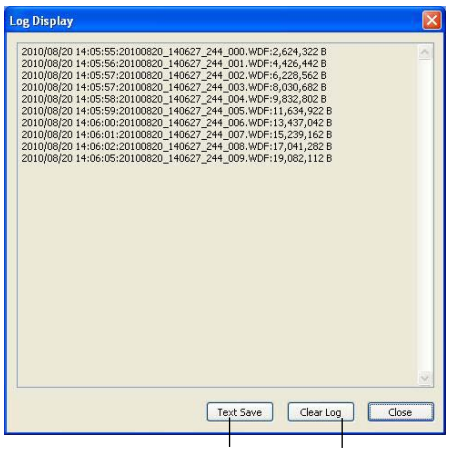
When you start the real-time data transfer software, it uses the previous settings to start transferring data.

When you click Transfer, the connected DL850/DL850V starts measuring.

2. Select the check boxes for the options that you want to enable, and click OK.

Viewing the Log

3. On the real-time data transfer software's **Settings** menu, click **Log**. If you have selected the Output Log check box on the Option screen, the data transfer log is displayed.



Saves the log to a text file **Clears the displayed log**

Viewing the Version

4. On the real-time data transfer software's **Help** menu, click **About DL850RTTransfer** to view the software's version information.

Explanation

Option

Output Log

If this option is enabled, the transfer day and time, file name, and file size for each of the transferred files are listed in the log. From the time when the software starts to the time when you exit the software, the most recent 5,000 file transfers can be listed in the log. To view the log, on the Settings menu, click Log.

Start transfer with Start-up

If this option is enabled, as soon as the software starts, it will start transferring data with the same connection conditions from the last time that the software was used. If the connection fails, an error will occur.

Start measuring with Transfer

If this option is enabled, the DL850/DL850V will start measuring as soon as you click Transfer.

Note

If the file-division or hard-disk-recording feature has been turned off on the DL850/DL850V that you have connected to, an error will occur.

Log

When the Output Log check box is selected, the Log Display dialog box shows the log. You can also save the displayed log to a text file.

4.1 File Utility Features

File Merging

Item	Specifications
Merge mode	Time series/channel
Applicable files	**Time series** • Waveform data files that were divided and saved into multiple files during DL850/DL850V hard disk recording • Files that were divided through this file utility program • Waveform data files that were saved through DL850/DL850V hard disk recording and that meet the following conditions The sample rate is the same. The number of channels is the same. The measurement point timestamps are sequential between the files. **Channel** • Files that have been saved through DL850/DL850V hard disk recording • Files that have been saved through the use of the normal trigger feature
Number of files that can be merged	Time series: 1* to 100 * For groups of files that have been created through file division and save operations, only the first file is specified. 100 files or less. Channel: 2 to 8 The total number of channels must not exceed 128.
File size	20 GB or less, 10 Gpoint or less

File Division

Item	Specifications
Division mode	Equal division, clipping
Applicable files	• Files that have been saved through DL850/DL850V hard disk recording • Files that were merged sequentially over time or that were divided through this file utility program
Division unit	Time, no. of points
Start position	The first data entry or the specified point or time
Division (record) length	Time: 1 to 2,592,000 seconds No. of points: 1 to 10,000,000,000
Number of files	The number of resultant files after division is 1,000 files or less.
File size	The file size of the resultant files after division is 10 Gpoint or less each.

Format Conversion

Item	Specifications
Conversion file format	CSV/FLD/WVF
Applicable files	DL850/DL850V waveform data files
Data compression	None, PP comp, decim Compression rate: 5, 10, 20, 50, 200, 500, 1000, 2000, 5000, 10000
File division (CSV)	Files can be divided by the specified number of lines and converted. No. of lines per file: 10 to 100,000,000 Number of files: 1,000 max.
Time axis information (CSV)	Absolute time or relative time from the trigger point can be added.
Headers (CSV)	Measurement conditions can be saved as headers. None: Headers are not added. All file: Headers are added to all the files that result from the division and save operation. Head file: Headers are added only to the first file that results from the division and save operation.
Sub-channel interpolation (CSV)	Data that has been saved with a 16-CH Voltage Input Module (720220) or a CAN bus Monitor Module (720240) can be interpolated.
Decimal point (CSV)	A period or a comma can be used to represent the decimal point.
File size	The size of converted files is 2 GB or less.

Finalization

Item	Specifications
Applicable files	Waveform data files that were saved through DL850/DL850V hard disk recording but have not been finalized

4.2 Real-Time Data Transfer Software

Item	Specifications	
Transfer feature	Data that is being saved through DL850/DL850V hard disk recording (with the file division feature turned on) or data that has already been saved through DL850/DL850V hard disk recording can be transferred to a PC during hard disk recording.	
File list	The name of the file, the date and time when the file was updated, the file's data size, the transfer state, and the percentage of the file that can be viewed are listed.	
	File Name:	Displayed with the extension
	Date:	Displayed in the format yyyy/mm/dd hh:mm
	Data size:	Displayed as the number of bytes
	State:	Transferring, Complete, Abort
	Available:	Displays the percentage of the whole file that can be viewed in Xviewer
Communication feature	Connectable through Ethernet or USBTMC	
	Network:	The DL850/DL850V is detected by its IP address.
	USBTMC:	The DL850/DL850V is detected by its serial number.
Option	Output Log:	From the start of the data transfer, the information of the transferred files is listed in the log. The contents of the log can be saved to a text file. Up to 5,000 lines can be displayed in the log.
	Start transfer with Start-up:	After the software starts, the previous conditions are used to make a connection, and the data transfer starts.
	Start measuring with Transfer:	At the same time that the data transfer starts, the DL850/DL850V starts measuring.

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